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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/107,371    06/30/98    HAUCK

J    1270

EXAMINER

QM12/0213

BECK & TYSVER  
SUITE 440  
1011 FIRST STREET SOUTH  
HOPKINS MN 55343

BUDDY D

ART UNIT

PAPER NUMBER

3739  
DATE MAILED:

//  
02/13/01

**Please find below and/or attached an Office communication concerning this application or proceeding.**

**Commissioner of Patents and Trademarks**

# Office Action Summary

Application No.

09/107,371

Applicant(s)

HAUCK ET AL.

Examiner

David M Ruddy

Art Unit

3739

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 05 December 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claims \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. § 119

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

## Attachment(s)

- 15) ☒ Notice of References Cited (PTO-892)
- 16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 17) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 18) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 19) ☐ Notice of Informal Patent Application (PTO-152)
- 20) ☐ Other:

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

Claims 1-5 are rejected under 35 U.S.C. 102(e) as being anticipated by Belohlavek (patent #5,871,019). Belohlavek discloses a method for modeling a chamber of the heart in three dimensions, as seen in drawing figures 1 and 4-8 and as explained in column 5, lines 15-30; column 8, lines 13-30; column 10, lines 58-61; column 13, lines 19-38; and column 15, lines 23-34. As explained in the above referenced passages of column 5 and as shown in drawing figures 4-5, there is disclosed a method of collecting points in three dimensions and corresponding time parameters in combination with the steps of resampling and smoothing. The models are disclosed as being synchronized with specific phases of the cardiac cycle for specific cardiac parameter analysis.

Claims 1-6 are rejected under 35 U.S.C. 102(b) as being anticipated by Sheehan et al (patent #5,601,084). Sheehan et al., discloses a method for modeling a chamber of the heart in three dimensions, as seen in drawing figures 10-14 and as explained in

column 1, lines 30-37; column 9, lines 48-65 (with particular reference to the X,Y,Z, and time data-parameters); column 10, lines 6-16; column 13, lines 20-67; and column 19. Sheehan et al. disclose a method of determining cardiac wall boundaries and cardiac wall velocity and cardiac chamber volume by an analyzation of points at different portions of the cardiac cycle. The method is used to determine a patient cardiac health by a determination of cardiac wall motion and ejection fraction.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sheehan et al. In regard to the rejections above, Sheehan et al. disclose all that is claimed except an expressly disclose step of measuring cardiac wall acceleration. As explained throughout the reference of Sheehan et al., the cardiac wall velocity is determined by a change in cardiac wall position with respect to time as determined by the specific portion of the cardiac cycle. Accordingly, one having ordinary skill in Newtonian physics would realize that the determination of acceleration can be made by taking the second derivative of position (ie. an acceleration determination can be made by measuring the change in velocity with respect to time). The determination of acceleration is advantageous in that various cardiovascular parameters (such as blood flow and force

of ejection) can be determined based on its measurement. Accordingly, it would have been obvious to one having ordinary skill in the art to determine the heart wall acceleration.

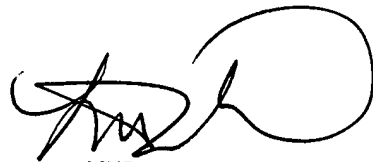
### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David M Ruddy whose telephone number is (703) 308-3595. The examiner can normally be reached on Mon-Fri 8:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Linda Dvorak can be reached on (703) 308-0994. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-0758 for regular communications and (703) 308-0758 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1148.

DR  
February 6, 2001



**LINDA C. M. DVORAK**  
**SUPERVISORY PATENT EXAMINER**  
**GROUP 3700**